

INT-03-009

What is claimed is:

1. A shielded cable device comprising:

A conductor; and

a conductive shield surrounding said conductor wherein
said conductive shield comprises a conductive loaded,
5 resin-based material comprising conductive materials in a
base resin host.

2. The device according to Claim 1 wherein the ratio, by
weight, of said conductive materials to said resin host is
between about 0.20 and about 0.40.

3. The device according to Claim 1 wherein said conductive
materials comprise metal powder.

4. The device according to Claim 3 wherein said metal powder
is nickel, copper, silver, or is a material plated with
nickel, copper, or silver.

5. The device according to Claim 3 wherein said metal powder
comprises a diameter of between about 3 μm and about 12 μm .

6. The device according to Claim 1 wherein said conductive
materials comprise non-metal powder.

7. The device according to Claim 6 wherein said non-metal powder is carbon, graphite, or an amine-based material.

8. The device according to Claim 1 wherein said conductive materials comprise a combination of metal powder and non-metal powder.

9. The device according to Claim 1 wherein said conductive materials comprise micron conductive fiber.

10. The device according to Claim 9 wherein said micron conductive fiber is nickel plated carbon fiber, stainless steel fiber, copper fiber, silver fiber or combinations thereof.

11. The device according to Claim 9 wherein said micron conductive fiber pieces each have a diameter of between about 3 μm and about 12 μm and a length of between about 2 mm and about 14 mm.

12. The device according to Claim 1 wherein said conductive materials comprise a combination of conductive powder and conductive fiber.

13.The device according to Claim 1 wherein said conductor comprises a wire with a surrounding insulating layer.

14.The device according to Claim 13 further comprising a metal layer overlying a part of said conductive shield.

15.The device according to Claim 13 further comprising a grounding conductor embedded in said conductive shield.

16.The device according to Claim 13 further comprising an insulating outer jacket surrounding said conductive shield.

17.The device according to Claim 16 wherein said insulating outer jacket comprises a resin-based material.

18.The device according to Claim 17 wherein said resin host of said conductive shield is the same material composition as said resin-based material of said insulating outer jacket.

19.The device according to Claim 13 further comprising at least one additional conductor wherein said additional conductor comprises a wire with a surrounding insulating layer.

20. The device according to Claim 19 wherein said conductor and said additional conductor are twisted together to form a twisted pair of signal wires.

21. The device according to Claim 20 further comprising at least one additional twisted pair of signal wires.

22. A shielded cable device comprising:

A conductor wherein said conductor comprises a wire with a surrounding insulating layer;

5 a conductive shield surrounding said conductor wherein said conductive shield comprises a conductive loaded, resin-based material comprising conductive materials in a base resin host; and

an insulating outer jacket surrounding said conductive shield.

23. The device according to Claim 22 wherein the ratio, by weight, of said conductive materials to said resin host is between about 0.20 and about 0.40.

24. The device according to Claim 22 wherein said conductive materials comprise metal powder.

25. The device according to Claim 22 wherein said conductive materials comprise non-metal powder.

26. The device according to Claim 22 wherein said conductive materials comprise a combination of metal powder and non-metal powder.

27. The device according to Claim 22 wherein said conductive materials comprise micron conductive fiber.

28. The device according to Claim 22 wherein said conductive materials comprise a combination of conductive powder and conductive fiber.

29. The device according to Claim 22 further comprising a metal layer overlying a part of said conductive shield.

30. The device according to Claim 22 further comprising a grounding conductor embedded in said conductive shield.

31. The device according to Claim 22 wherein said insulating outer jacket comprises a resin-based material.

32.The device according to Claim 22 further comprising at least one additional conductor wherein said additional conductor comprises a wire with a surrounding insulating layer.

33.The device according to Claim 32 wherein said conductor and said additional conductor are twisted together to form a twisted pair of signal wires.

34.The device according to Claim 33 further comprising at least one additional twisted pair of signal wires.

35.A method to form a shielded cable device, said method comprising:

providing a conductor; and

forming a conductive shield surrounding said conductor

5 wherein said conductive shield comprises a conductive loaded, resin-based material further comprising conductive materials in a resin host.

36.The method according to Claim 35 wherein the ratio, by weight, of said conductive materials to said resin host is between about 0.20 and about 0.40.

37.The method according to Claim 35 wherein the conductive materials comprise a conductive powder.

38.The method according to Claim 35 wherein said conductive materials comprise a micron conductive fiber.

39.The method according to Claim 35 wherein said conductive materials comprise a combination of conductive powder and conductive fiber.

40.The method according to Claim 35 wherein said step of forming a conductive shield comprises:

pulling said conductor;

extruding said conductive loaded, resin-based material
5 onto said pulled conductor to thereby form said conductive shield; and

curing said conductive loaded, resin-based material.

41.The method according to Claim 40 further comprising extruding an insulating outer jacket onto said conductive shield.

42.The method according to Claim 35 wherein said step of forming a conductive shield comprises:

pulling said conductor; and

5 wrapping said conductive loaded, resin-based material
onto said pulled conductor to thereby form said conductive
shield wherein said conductive loaded, resin-based material
is previously formed into a conductive fabric.

43. The method according to Claim 42 further comprising
extruding an insulating outer jacket onto said conductive
shield.

44. The method according to Claim 35 further comprising
forming a metal layer overlying a part of said conductive
shield: 43 pulled conductor to thereby form said conductive
shield wherein said conductive loaded, resin-based material

45. The method according to a Claim 44 wherein said step of
forming a metal layer around said conductive loaded, resin-
based material is by plating or by coating said metal
layer. 44 insulating outer jacket onto said conductive